



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/718,842

11/21/2003

Sartaj Kumar Sahni

UF-311XC1

1937

23557

7590

03/18/2008

SALIWANCHIK LLOYD & SALIWANCHIK

A PROFESSIONAL ASSOCIATION

PO BOX 142950

GAINESVILLE, FL 32614-2950

EXAMINER

PATEL, JAY P

ART UNIT

PAPER NUMBER

2619

MAIL DATE

DELIVERY MODE

03/18/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/718,842	Applicant(s) SAHNI ET AL.	
	Examiner JAY P. PATEL	Art Unit 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. In regards to claim 1, the phrases “establishing s” and “min (n, 2^s + 1)” are vague. It is unclear what “s” and “n” are and the claim fails to particularly define the terms.

4. In regards to claim 12, the phrases “establishing s” and “min (n, 2^s + 1)” are vague. It is unclear what “s” and “n” are and the claim fails to particularly define the terms.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1 and 12 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 8 of copending Application No. 10719914. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims in the present application merely eliminate.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

In regards to claims 1 and 12 of the present application, they merely substitute representing the prefixes using routing table data structure from claims 1 and 8 of the copending application with representing the prefixes in each partition using a priority search tree defining a rectangle comprising the prefixes associated with the desired destination address.

It has been held that the omission of an element and its function is an obvious expedient if the remaining elements perform the same function as before. In re Karlson, 136 USPQ 184(CCPA). Also note Ex Parte Rainu, 168 USPQ 375 (Bd. App. 1969); omission of a reference element whose function is not needed would be an obvious variation.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to merely interchange the terms. The motivation to do so would be use a more dynamic storing structure to indexes the routes.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claim 17 is rejected under 35 U.S.C. 102(e) as being anticipated by van Lunteren (US 6611832 B1).

9. Van Lunteren shows a data structure for matching prefix searching and updating search table data structures. Figure 2 illustrates a set of prefix tables for the prefix assignments corresponding to search keys for longest matching prefix lookups for an IP destination address (receiving packets specifying prefixes and decision rules for the prefixes). Furthermore, figure 2 shows how the IP destination address divided in 3 segments based on the first 16, the middle 8 and the last 8 bits respectively (establishing s bits to be used in a prefix partitioning scheme and performing steps of multilevel partitioning). Figure 4 illustrates indexing based on the prefixes of the IP destination address (matching prefixes in a partitioning tree).

Van Lunteren shows at the end of column 4 an example of routing table and how the prefixes are used. The result value contained in a table entry is designated by a capital letter and represents the identification of an output route to be used or of a next processing step to be executed, when the respective entry was found (representing

at least one prefix as a range with end points, establishing one interval using the end points and partitioning the intervals into interval-based dynamic router table data structures) (see column 5, lines 10-21).

In regards to claim 18, the routing table in columns 4 and 5 also anticipates storing the intervals in a node of a basic interval tree. Figure 4 further shows that the prefix tables are stored according to the segments (storing the prefixes whose ranges are represented by the intervals in a collection of prefix nodes). The respective prefix table has a result column (establishing a header node and a prefix node for each prefix tree). Figure 7 shows a process for finding the proper table and entry where step 5 is a link into a search structure (establishing a pointer to the prefix tree for an interval and storing the pointer with the interval in the basic interval tree node).

In regards to claim 19, the prefixes are divided into 16-bit, 8-bit and 8-bit segments respectively.

In regards to claim 20, figure 2 illustrates a set of prefix tables for the prefix assignments corresponding to search keys for longest matching prefix lookups for an IP destination address.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over van Lunteren (US Patent 6611832 B1 as applied to claim 1 above, and further in view of Rochberger (US Patent 6396842 B1).

12. In regards to claim 21, van Lunteren teaches all the limitations of parent claim 17. However van Lunteren fails to teach, inserting a new prefix in a prefix tree and storing the intervals in a tree and establishing and storing of pointers for the new prefix. Rochberger however shows the above-mentioned limitations in figures 7 and 12. Figure 7 step 162 shows inserting modified address prefix into a tree and updating prefix list in step 164. Furthermore figure 12 shows trees 150-154 being indexed from tables 132, 142 and 144.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the prefix updating taught by Rochberger with the prefix searching method taught by van Lunteren. The motivation to do so would be to reduce routing table size (see van Lunteren, column 3, lines 44-45).

13. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over van Lunteren (US Patent 6611832 B1 as applied to claim 1 above, and further in view of Melchior (US Patent 6353873 B1).

In regards to claim 22, van Lunteren teaches all the limitations of parent claim 17. However van Lunteren fails to teach, deleting a prefix in a prefix tree and storing the intervals in a tree and establishing and storing of pointers for the new prefix. Melchior however teaches the above-mentioned limitations in figure 19 where a prefix is added or deleted from a prefix table with subsequent updates.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the prefix deleting taught by Melchior with the prefix searching method taught by van Lunteren. The motivation to do so would be to reduce routing table size (see van Lunteren, column 3, lines 44-45).

Conclusion

14. Claims 1-16 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAY P. PATEL whose telephone number is (571)272-3086. The examiner can normally be reached on M-F 9:00 am - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/718,842
Art Unit: 2619

Page 8

Jay P. Patel
Examiner
Art Unit 2619

/J. P. P./
Examiner, Art Unit 2619

/Edan Orgad/
Supervisory Patent Examiner, Art Unit 2619